

REMARKS

The present amendment is submitted in response to the Non-Final Office Action mailed September 18, 2008. In view of the amendments above and the remarks to follow, reconsideration and allowance of this application are respectfully requested.

Status of Claims

Claims 1-16 remain in this application. Claims 1, 2, 4 and 6 have been amended. Claims 7-16 have been added. No new matter has been added.

The Invention

Before addressing the particular objections/rejections raised in the instant Office Action, it is instructive to briefly review the invention.

The present invention is directed to a method for exchanging messages in an integrated circuit. IP blocks communicate with other IP blocks via network interface modules NI. The network interfaces manage the communication between the IP blocks and the network. This allows the IP blocks to perform their dedicated operations without having to deal with the communication of the network or other IP blocks. An IP block can initiate a transaction with another IP block by placing a request, possibly with some data or required connection properties. A transaction address will therefore have two parts: (a) a destination identifier, and (b) an internal address at the destination. An address translation manager AT, having an address mapping table AMT, performs a decoding of the address of a target (slave) IP block based on information stored in the address mapping table.

A integrated circuit of the invention, according to the claims comprises a plurality of modules (i.e., IP blocks) and a network arranged for transferring messages between the modules (IP blocks) wherein a message issued by a first module M comprises first information indicative of a location of an addressed module S within the network, and second information indicative of a location within the addressed module S. The

integrated circuit includes at least one address translation means for receiving the message issued by the first module M comprising the first and second information and arranging the first and the second information as a single address. The address translation means is adapted to determine which module S is being addressed in the received message based on the first information of said single address, and further determine the selected location of the addressed module S based on the second information of the single address.

Abstract Objection

In the Office Action, the Abstract was objected to because the format is incorrect. Applicant has submitted a replacement abstract in a manner which is believed to overcome the objection.

Specification Objections

In the Office Action, the disclosure was objected to for certain informalities. On page 4, line 20, claim 7 seems to refer to claim 6. On line 8, "slave module T" does not appear in the drawings. On page 11, line 2, "master module I" does not appear in the drawings. On page 11, lines 3 and 4, "slave module T, S" does not appear in the drawings. On page 6, lines 31, 32 and 34, "router network RN" does not appear in the drawings and on page 14, line 8, "router network RN" does not appear in the drawings. Applicant has both submitted replacement paragraphs 4 and 11 and has amended the drawings in a manner which is believed to overcome the objections. No new matter has been added.

Rejections under 35 U.S.C. §112

In the Office Action, Claims 1-6 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as his invention. For claims 1 and 6, "the selected location" has no antecedent basis. For claim 2, "the communication" has no antecedent

basis. Claims 2-5 are rejected as being dependent on a rejected claim. Claims 1-6 have been amended in a manner which is believed to overcome the rejections.

Rejections under 35 U.S.C. §102(b)

In the Office Action, Claim 6 stands rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,381,638 (“Mahler”). Applicant respectfully traverses the rejection.

It is axiomatic that anticipation of a claim under 35 U.S.C. §102(b) can be found only if the prior art reference discloses every element of the claim. See In re King 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co. 730 F. 2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

Claim 6 is allowable

The cited portions of Mahler do not anticipate claim 6 because the cited portions of Mahler do not teach every element of claim 6. For example, the cited portions of Mahler do not disclose or suggest, “*said first module M issuing a message to an address translation unit, arranging, at said translation unit, the first and the second information comprising said message as a single address, determining, at said translation unit, which module S is being addressed in said message issued from said first module M based on said single address, and further determining, at said translation unit, the selected location of the addressed module S based on said single address*”, as in claim 6.

Mahler is directed to a system and method of IP address re-use used by a network system. See Mahler, col. 5, lines 30-33. A system, according to Mahler, comprises a first network having a host device with a host address and a host port, and a router which routes packets to a second network external to the first network having a server device. A host device from the first network routes packets to a second and third network. The host device has an IP address that is equivalent to an external common network address and an internal network address for identifying the host device within the first network

(MAC address or modem port number). *See* Mahler, col. 6, 60-65. When the host device sends a TCP-SYN packet to a server device in another network to begin a TCP transmission, a router intercepts the TCP-SYN packet before it leaves the first network where the host device resides. The router identifies the host device sending the packet by its MAC address or alternatively by its modem port number. *See* Mahler, col. 7, lines 50-55. Next, the router adds an OBAR ID to the IP options part of the IP header of the TCP-SYN packet sent by the host device. *See* Mahler, col. 8, lines 1-5. As a result of the OBAR ID attached by the router, the host device now has a combination external network address, as illustrated in Fig. 6 of Mahler. The combination external network address is used to identify the host device 14 to other networks or devices external to the first computer network. This is a key feature taught in Mahler.

The combination external network address 112, assigned to the host device, comprises an external IP address 114, a TCP port number 115, and an OBAR ID 116. For the example shown in FIG. 4 of Mahler, the external IP address 114 is the same as the external common network address 28, which is 198.10.20.30, the TCP port number 115 is 1029, and the OBAR ID 116 is 1. *See* Mahler, col. 8, lines 45-55.

It is respectfully submitted that the creation of a combination external network address used to identify a host device 14 in a first network to devices in other networks or devices external to a first network is different from a message exchange system comprising message sending modules M, message receiving modules S, and address translation means for determining which module is being addressed by a message sending module M and for further determining the selected location of the addressed module S in the network. Thus, allowing the message sending module M to perform its dedicated operations without having to deal with the communication of the network or other modules in the network. It should be understood that the present invention is not concerned with identifying the message sending module M to outside networks. Rather, the invention is concerned with offloading a communication burden on the messaging modules by allowing them to concentrated solely on their dedicated operations. Communication becomes the concern of the address translation unit to identify one or

more message receiving modules for which a message generated by the messaging module is directed.

Hence, the cited portions of Mahler do not disclose or suggest, “*said first module M issuing a message to an address translation unit, arranging, at said translation unit, the first and the second information comprising said message as a single address, determining, at said translation unit, which addressed module S is being addressed in said message issued from said first module M based on said single address, and further determining, at said translation unit, the selected location of the addressed module S based on said single address*”, as in claim 6. Hence, claim 6 is allowable.

Rejections under 35 U.S.C. §103(a)

In the Office Action, Claims 1-5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Mahler in view of Guerrier et al. (“A Generic Architecture for On-Chip Packet-Switched Interconnections”). Applicant respectfully traverses the rejection.

Claim 1 is allowable

The cited portions of the above cited references fail to disclose or suggest the specific combination of claim 1. For example, the cited portions of Mahler fail to disclose or suggest, “*at least one address translation means for receiving said message issued by said first module M comprising said first and second information and arranging the first and the second information as a single address, wherein said address translation means is adapted to: determine which module S is being addressed in said received message based on said first information of said single address, and further determine the selected location of the addressed module S based on said second information of said single address*”, as in claim 1.

As discussed above, Mahler is directed to a system and method of IP address re-use used by a network system, referred to in Mahler as “OBAR”. See Mahler, col. 5, lines 30-33. Mahler teaches the use of a combination external network address for identifying a host device 14 to other networks or devices external to a first computer

network of the host device. It is submitted that identifying a host device 14 to an external network is different from determining, by address translation means, which module S is being addressed by a message issuing module M. In other words, in Mahler, the message sender (host device 14) is being identified to the network. In accordance with the present invention, the message sending module M relies on an address translation module (i.e., offloaded communication service) for determining which recipient module S the message sending module M intends the message to be sent to. As such, there is no need to identify the message sending module M to the network, as is true in Mahler.

Therefore, the cited portions of Mahler fail to disclose or suggest, *“at least one address translation means for receiving said message issued by said first module M comprising said first and second information and arranging the first and the second information as a single address, wherein said address translation means is adapted to: determine which module S is being addressed in said received message based on said first information of said single address, and further determine the selected location of the addressed module S based on said second information of said single address”*, as in claim 1.

Further, the cited portions of Guerrier et al. do not disclose or suggest “at least one address translation means for receiving said message issued by said first module M comprising said first and second information and arranging the first and the second information as a single address, wherein said address translation means is adapted to: determine which module S is being addressed in said received message based on said first information of said single address, and further determine the selected location of the addressed module S based on said second information of said single address”, as in claim 1.

In contrast to claim 1, Guerrier et al. at section 6, entitled, “The communication protocols” describes a packet switched network enabling dataflow and address communication. The communication protocol used by such a network is based on a sender-based protocol which utilizes an unambiguous chronological tagging of every packet transmitted in the stream. Guerrier et al. further describes, at section 2, that the

packet switched network utilizes a circuit-switching technique, where connections between two terminals are established by assigning them a set of time-slices on the network links. The set is determined by clever computations when the connection is requested and subsequently remains constant during the entire connection. It is respectfully submitted that establishing communications via circuit-switching techniques utilizing computations to establish a set of time-slices is different from utilizing address translation means to determine which module S is being addressed and its location in a network, in a message received from a message issuing module M based on first information indicative of the location of an addressed module S within the network, and second information indicative of a location within the addressed module S.

Therefore, the cited portions of the above cited references, individually or in combination, fail to disclose or suggest at least one element of claim 1. Hence, claim 1 is allowable. Claims 2-5 depend from claim 1, and are therefore allowable at least by virtue of their dependence from allowable claim 1.

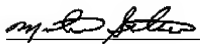
New claims 8 and 14-16 are added to further distinguish the present invention from the cited references.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-16 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-945-6000.

Respectfully submitted,



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